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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/894,422 | 06/28/2001 | Michael H. Wright | EMC-00-067 | 6882 |
| 51576 | 7590 | 07/10/2006 | EXAMINER | |
| EMC CORPORATION c/o DALY, CROWLEY, MOFFORD & DURKEE, LLP 354A TURNPIKE STREET SUITE 301A CANTON, MA 02021-2714 | | | LIN, KELVIN Y | |
| | | ART UNIT | PAPER NUMBER | |
| | | 2142 | | |
| DATE MAILED: 07/10/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/894,422 | WRIGHT ET AL. | |
| | Examiner | Art Unit | |
| | Kelvin Lin | 2142 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 April 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 28-56 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 28-56 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

Detailed Action

Response to Arguments

1. Application's argue with respect to claims 28-56 have been considered but they are not persuasive.
2. Applicant is arguing:
 - 1) Preamble of claim 28, "a method for managing data that may be replicated from one or more volumes of data that are part of a first volume group on a first computer system having a first operating system,".
 - 2) Second element of claim 28, Mounting a duplicate of the one or more volumes of data on a second computer system having a second operating system using the map to create a second volume group that is substantially identical to the first volume group.
 - 3) There is no motivation to combine Edward with Nakamura.
3. As point 1), where the applicant argues the combination of Edwards in view of Nakamura does not teach "**data that may be replicated from one or more volume of data**", it has been considered but is not persuasive. In response to applicant's arguments, the recitation "**data that may be replicated from one or more volumes of data**" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the

intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

4. As to point 2), where the applicant argues the combination of Edwards in view of Nakamura does not teach "how the replication is made, whether a map is created or used, and whether or how the replication is managed", it has been considered but is not persuasive. In response to applicant's arguments, the recitation of "**creating a map** of logical information related to one or more volumes of data that are part of a first volume group on a first computer system" that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Moreover, recitation of "how the **replication** is made and whether or how the **replication is managed**", especially the words "replication", are not recited in the rejected claim(s) as well. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
5. As to 3), because knowing that Edwards discloses at col. 10, l.40-60, the volume information in the original volume control block is copied to a different location for recovery purpose. Nakamura discloses at [0027], when the main center cannot perform its main function due to a an accident, a plurality of third volumes (T-

VOL) for storage of data to be read and written by the host, and [0065], the present invention can recover the abnormal state by using the data of the third volume. It would have been obvious to modify Edwards structure by implementing Nakamura recovery invention. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention.

Response to Amended Claims

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 28-56 are rejected under 35 USC 103(a) as being unpatentable over Edwards et al., (US Patent 6567811) in view of Nakamura et al., (US PG Pub 2002/0078296).
2. Regarding claim 28, Edwards teaches a method for managing data that may be replicated from one or more volumes of data that are part of a first volume group on a first computer system having a first operating system, the method comprising the computer-executed steps of:

- a. Discovering logical information related to the one or more volumes of data that are part of the first volume group on the first computer system and creating a map of the logical information to physical devices on the first computer system – Edwards further discloses a computer code depicts the process of gathering logical volume information, and creating map from logical volume to physical device disk.(Edwards, col.5, l.60-67).

Edwards teaches the limitation of mounting a copied of the one or more volumes of data and create a new volume on a new disk drive,

but, fails to teach the access the duplicate of the volume of data on a second computer system.

However, Nakamura teaches:

- b. Mounting (accessing) a duplicate (remote copying) of the one or more volumes of data on a second (remote) computer (file) system (Nakamura, [0011], [0031], l.13-15), having a second operating system using the map to create a second volume group that is substantially identical to the first volume group – (Nakamura, fig. 1).

It would have been obvious to one ordinary skilled in the art at the time the invention was made by incorporating the teaching of Nakamura for remote

duplication method for logical volumes to a remote storage system (second computer system).

The motivation would be that the combination of Nakamura and Edward storage system, because they are dealt with the logical volume duplication based on the networking system. Therefore, it will increase the accessibility for remote computer system to implementing the mount (access) and remote copying task.

3. Regarding claim 29, Edwards further discloses the method of claim 28, wherein the first and second operating system are substantially the same and are selected from a group consisting of IBM AIX, Sun Solaris, or HP UX, and the computer-executed steps may be performed substantially independent of which operating system is selected from the group (Edwards, col.5, l. 55-56).
4. Regarding claim 30, Edwards further discloses the method of claim 29, wherein the map is configured as a flat file (logical volume script) that is converted into a tree structure (file system) and including the step of using the tree structure to verify the accuracy of the information related to the volume group and the other logical information – e.g. check the appropriate name and values (Edwards, col.10, l.22-40, volume group can be manually verified for the conventional way).
5. Regarding claim 31, Edwards further discloses the method of claim 30, wherein the tree structure is converted back into a map that is sent to

a second computer system having a second operating system - by the mirroring procedure (Edwards, col. 5, I.34-35).

6. Regarding claim 32, Edwards further discloses the method of claim 31, Including the step of building a second volume group on the second computing system that is substantially a copy of the first volume group on the first computing system (Edwards, col. 10, I.41-43, I.65-67).
7. Regarding claim 33, Edwards further discloses the method of claim 32, including the step of :
 - a. Establishing one or more mirrored copies of data that are copies of one or more volumes of data that are part of the first volume group (Edwards, col. 10, I.44-46); and
 - b. separating the one or more mirrored copies of data from the respective one or more volumes of data (Edwards, col. 10, I.46-51).
8. Regarding claim 34, Edwards further discloses the method of claim 33, including the step of mounting the separated one or more copies of data on the first or second computer system using the second volume group (Edwards, col. 11, I.3-5).
9. Regarding claim 35, Edwards further discloses the method of claim 34, wherein the first and second computer system are combined (Edwards, col.11, I.1-7).

10. Regarding claim 36, Edwards further discloses the method of claim 34, including the step of : dismounting (unmounting) the separated one or more copies from the second computer system (Edwards, col.10, l.57-60).
11. Regarding claim 37, Edwards further discloses the method of claim 33, including the step of: backing up the separated one or more copies of data to a backup system (Edwards, col. 10, l.51-53).
12. Regarding claim 38, Edwards further discloses the method of claim 37, including the step of: restoring one or more volumes of data from the backup medium of from the one or more mirrored copies of data that are copies of the one or more volumes of data (Edwards, col. 10, l.61-65).
13. Regarding claim 39, Edwards further discloses the method of claim 33, wherein the respective one or more volumes of data that are part of a first volume group on the first computer system are further associated with a first software application – process logs application (Edwards, col. 10, l.49-51).
14. Regarding claim 40, Edwards further discloses the method of claim 39, wherein a second software application is provided on the second computer system and the separated one or more copies of data on the second computer system are associated with the second software application – process logs application (Edwards, col. 11, l.1-2).

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15. Regarding claim 41, Edwards further discloses the method of claim 40, including the step of: backing up the separated one or more copies of data to a backup medium (Edwards, col. 11, l.3-4).
16. Regarding claim 42, Edwards further discloses the method of claim 41, wherein the second software application has an associated database and the step of backing up the separated one or more copies of data to a backup medium includes backing up the associated database (Edwards, col.5, l.32-52, col. 11, l. 4-6).
17. Regarding claim 43, Edwards further discloses the method of claim 42, wherein there is a set of information associated with the database, the set of management data including table spaces, archive logs, redo logs, and control file and at least some of the set of information associated with the database is backed up to the backup medium during the backup step – A table spaces is a logical storage unit in the file system so database objects can be stored, furthermore, Edwards further discloses that the file system and log files are backup (merged and synchronized) (Edwards, col. 10, l.1-39, which teaches in contrast between the conventional and Edwards methods, and simplified the methods without backup procedure.).
18. Regarding claim 44 has similar limitations as claims 43.
Therefore, claim 44 is rejected under Edwards for the same reason set forth in the rejection of claim 43.

19. Regarding claims 45-55 have similar limitations as claims 28-38.

Therefore, they are rejected under Edwards for the same reason set forth in the rejection of claims 28-38.

20. Regarding claim 56, has similar limitations as claims 28, and 33.

Therefore, claim 56 is rejected for the same reason set forth in the rejection of claims 28, and 33.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first replay is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE MONTH shortened statutory period, then the shortened statutory period will expire on the date advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTH from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelvin Lin whose telephone number is 571-272-3898. The examiner can normally be reached on Flexible 4/9/5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

6/27/06
KYL



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